

Appellant's Brief on Appeal
U.S. Application Serial No. 10/647,540

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Naphade et al.

Serial No.: 10/647,540

Group Art Unit: 2624

Filed: August 26, 2003

Examiner: Alex Kok Soon Liew

For: SYSTEM, METHOD, AND RECORDING MEDIUM FOR COARSE-TO-FINE DESCRIPTOR PROGATION, MAPPING AND/OR CLASSIFICATION

APPELLANTS' BRIEF ON APPEAL

Honorable Commissioner of Patents
Alexandria, Virginia 22313-1450
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Sir:

Appellants respectfully appeal the final rejection of claims 1-4, 6-13, and 15-23 in the Final Office Action dated May 31, 2007. A Notice of Appeal was timely filed on October 1, 2007.

I. REAL PARTY IN INTEREST

The real party in interest is International Business Machines Corporation assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal representative or Assignee, which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-4, 6-13, and 15-23 are all of the claims pending in the Application. In the Office Action dated May 31, 2007, the Examiner indicated that claims 1-23 were pending in the Application. As Appellants pointed out in the Request for Reconsideration filed on August 31, 2007, the listing of claims in the Office Action dated May 31, 2007 is incorrect. That is, Appellants canceled claims 5 and 14 in the Amendment filed under 37 C.F.R. § 1.111 on May 7, 2007. Claims 1-4, 6-13, and 15-23, all of the claims involved in the appeal, are set forth fully in the attached Appendix.

Claims 1-4, 6-13, and 15-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ishikawa (U.S. Patent No. 5,933,527).

Appellants respectfully appeal the rejections of claims 1-4, 6-13, and 15-23 under 35 U.S.C. § 102(b) as being anticipated by Ishikawa, which is the sole issue in this Appeal.

IV. STATUS OF AMENDMENTS

A Request for Reconsideration under 37 C.F.R. § 1.116 was filed on August 31, 2007. The claims were not amended in the Request for Reconsideration. The claims in the Appendix reflect the version of the claims in the Amendment under 37 C.F.R. § 1.111 submitted on May 7, 2007.

A Notice of Appeal was timely filed on October 1, 2007.

Therefore, the claims are pending as set forth in the Appendix.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellants point out that reference numbers, figure numbers, and references to passages in the Specification used in this section, and other sections, of the Appeal Brief are provided merely for the benefit of the Board and for meeting the requirements set forth in 37 C.F.R. § 41.37(c)(v) and are not meant to limit the scope of the claimed invention in any manner.

INDEPENDENT CLAIM 1

The claimed invention, as set forth in exemplary claim 1, is directed to a descriptor propagation system (e.g., 1600; see Application at Figure 16, and page 17, lines 8-18). The system includes a descriptor acceptance device (e.g., 1606; see Figure 16) that accepts a first descriptor associated with a first content granularity (e.g., see Application at page 17, lines 12-14), and a descriptor propagation device (e.g., 1610; see Application at Figure 16, and page 17, lines 12-15) that propagates the first descriptor to a second content granularity that is finer than the first content granularity (e.g., see Application at page 18, lines 12-15), and wherein the descriptor propagation device propagates the first descriptor without prior data regarding the first descriptor at the second granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9).

INDEPENDENT CLAIM 4

The claimed invention, as set forth in exemplary claim 4, is directed to a descriptor mapping system (e.g., 1900; see Application at Figure 19 and page 19, line 17 through page 20, line 12). The mapping system includes a descriptor acceptance device (e.g., 1906; see

Application at Figure 19 and page 20, lines 3-5) that accepts a first descriptor at a first content granularity (e.g., see Application at page 17, lines 12-14), and an information repository (e.g., 1912; see Application at Figure 9) that stores a mapping function (e.g., see Application at page 19, lines 6-18), and a descriptor propagation device (e.g., 1910; see Application at Figure 19 and page 20, lines 7-9) that propagates the first descriptor to a second content granularity which is finer than the first content granularity based upon the first descriptor and the mapping function without prior data regarding the first descriptor at the second granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9).

INDEPENDENT CLAIM 8

The claimed invention, as set forth in exemplary claim 8, is directed to a descriptor classification system (e.g., 2100; see Application at Figure 21 and page 21, line 8 through page 22, line 7). The classification system includes a descriptor acceptance device (e.g., 2108; see Application at Figure 21 and page 21, lines 17-18) that accepts a first content that includes a first descriptor at a first content granularity (e.g., see Application at page 17, lines 12-14) and a descriptor propagation device (e.g., see Application at Figure 21 and page 21, line 19) that propagates content that includes the first descriptor to a second content granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9), wherein the second content granularity is finer than the first content granularity (e.g., see Application at page 18, lines 12-15) and wherein the descriptor propagation device propagates the content without prior data regarding the content at the

second content granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9).

INDEPENDENT CLAIM 10

The claimed invention, as set forth in exemplary claim 10, is directed to a method for propagating descriptors (e.g., see Application at page Figures 17 and 18, and page 17, line 19 through page 19, line 16). The method includes analyzing (e.g., see Application at page 18, lines 10-13) a first content at a first content granularity to determine a propagation function that correlates a first descriptor provided for the first content to a second content granularity that is finer than the first content granularity (e.g., see Application at page 17, lines 12-14), and propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9).

INDEPENDENT CLAIM 12

The claimed invention, as set forth in exemplary claim 12, is directed to a method for mapping descriptors (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7). The method includes mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7) and propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7).

INDEPENDENT CLAIM 16

The claimed invention, as set forth in exemplary claim 16, is directed to a method for classifying descriptors (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7). The method includes generating a classification (e.g., S2210; see Application at Figure 22 and page 22, lines 16-19) function based upon a first descriptor for a first content at a first content granularity, accepting a second content granularity that does not include a descriptor (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7), and propagating the first descriptor to the second content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7).

INDEPENDENT CLAIM 17

The claimed invention, as set forth in exemplary claim 17, is directed to a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17) to perform a method of propagating descriptors. The program includes instructions for generating a classification function based upon a first descriptor for a first content at a first content granularity (e.g., S2210; see Application at Figure 22 and page 22, lines 16-19), instructions for accepting a second content that does not include a descriptor (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7), and instructions for propagating the first descriptor to the second content at a second

content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7).

INDEPENDENT CLAIM 18

The claimed invention, as set forth in exemplary claim 18, is directed to a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17) to perform a method of mapping descriptors. The program includes instructions for mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7) and instructions for propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7).

INDEPENDENT CLAIM 20

The claimed invention, as set forth in exemplary claim 20, is directed to a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17) to perform a method of classifying descriptors (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7). The program includes instructions for generating a classification function based upon a first descriptor for

a first content at a first content granularity (e.g., S2210; see Application at Figure 22 and page 22, lines 16-19), instructions for accepting a second content that does not include a descriptor (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7), and instructions for propagating the first descriptor to the second content at a second content granularity that is finer than the first content granularity based upon the classification function without data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7).

INDEPENDENT CLAIM 21

The claimed invention, as set forth in exemplary claim 21, is directed to a method of deploying computing infrastructure in which computer-readable code is integrated into a computing system (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17), such that the code and the computing system combine to perform a method for propagating descriptors (e.g., see Application at page Figures 17 and 18, and page 17, line 19 through page 19, line 16). The method includes analyzing (e.g., see Application at page 18, lines 10-13) a first content at a first content granularity to determine a propagation function that correlates a first descriptor provided for the first content to a second content granularity that is finer than the first content granularity (e.g., see Application at page 17, lines 12-14) and propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity (e.g., see Application at page 13, line 18 through page 16, line 19 and page 17, line 19 through page 18, line 9).

INDEPENDENT CLAIM 22

The claimed invention, as set forth in exemplary claim 22, is directed to a method of deploying computing infrastructure in which computer-readable code is integrated into a computing system (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17), such that the code and the computing system combine to perform a method for mapping descriptors (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7). The method includes mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7) and propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 20 and page 20, line 13 through page 21, line 7).

INDEPENDENT CLAIM 23

The claimed invention, as set forth in exemplary claim 23, is directed to a method of deploying computing infrastructure in which computer-readable code is integrated into a computing system (e.g., see Application at Figures 1 and 2, and page 11, line 23 through page 13, line 17), such that the code and the computing system combine to perform a method for classifying descriptors (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7). The method includes generating a classification function based upon a first descriptor for a first content at a first content granularity (e.g., S2210; see Application at Figure 22 and page 22, lines 16-19), accepting a second content that does not include a descriptor (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7), and

propagating the first descriptor to the second content at a second content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity (e.g., see Application at Figure 22 and page 22, line 8 through page 23, line 7).

Each of the features recited in dependent claims 2, 3, 6, 7, 9, 11, 13, 15, and 19 are described in detail in the Specification (e.g., see pages 11-23) and Figures 1-22 of the Application.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues presented for review by the Board of Patent Appeals and Interferences are whether claims 1-4, 6-13, and 15-23 are anticipated under 35 U.S.C. § 102(b) by Ichikawa.

VII. ARGUMENT

A. THE EXAMINER'S POSITION

In the Final Office Action dated May 31, 2007, the Examiner rejected claims 1-4, 6-13, and 15-23 under 35 U.S.C. § 102(b) as being anticipated by Ishikawa.

The Examiner alleged that Ishikawa discloses,

“a descriptor propagation device that propagates the first descriptor to a second content granularity that is finer than a first content granularity (see figure 1 – 33, 43, 53 and 63- the eye brow is the second content granularity), and wherein the descriptor propagation device propagates the first descriptor at a second granularity (see figure 1 – the searches for the features of a human head is done in parallel configuration, wherein propagation to finer content does not depend on previous granularity content).”
(See Office Action dated May 31, 2007 at page 3).

B. APPELLANT'S POSITION

To summarize, Appellants submit that the Examiner's position is flawed as a matter of fact and law. Thus, claims 1-4, 6-13, and 25-23 are not anticipated by Ishikawa.

1. INDEPENDENT CLAIMS 1, 4, 8, 10, 12, 16, 17, 18, 20, 21, 22, and 23

**a. The Examiner's Position is Flawed as a Matter of Fact
and Law.**

The Examiner alleges that Ishikawa teaches the claimed invention of claims 1-4, 6-13, and 15-23. Appellants submit, however, that Ishikawa does not teach or suggest every element of the claimed invention.

That is, Ishikawa does not teach or suggest the features of the claimed invention including propagating the descriptor without prior data regarding the descriptor at the second granularity. As explained above, this feature is important for automatically propagating a descriptor to an appropriate content granularity while only receiving the descriptor at a different, coarser granularity (from, for example, the user). Indeed, Ishikawa does not teach or suggest propagating a descriptor.

The claimed invention is directed to a method (and system) of propagating (e.g., assigning) annotations to an image. The method (and system) allows a user to assign annotations (e.g., 302, 304, 306, and 308; Appellants submit that exemplary reference numbers are merely provided for the aid of the Board and are not meant to limit the scope of the claimed invention in any manner) to a video image (e.g., 300) (e.g., see Application at Figures 3-5).

In stark contrast to the claimed invention, Ishikawa does not teach or suggest propagating any descriptor at all.

Rather, Ishikawa merely discloses a method of extracting specific feature areas (e.g., eyes, nose, mouth, etc.) of a facial image and outputting the specific feature area to a separate image. Ishikawa, however, does not teach or suggest assigning annotations to the original facial image or to the specific features in the original facial image.

Ishikawa does not teach or suggest propagating any descriptor at all, let alone propagating any descriptor to another content granularity without prior data regarding that descriptor at the second content granularity.

Accordingly, Ishikawa does not teach or suggest “*a descriptor propagation device that propagates the first descriptor to a second content granularity that is finer than the first content granularity, and wherein the descriptor propagation device propagates the first descriptor without prior data regarding the first descriptor at the second granularity*”, as recited in claim 1, and similarly recited in claims 4, 8, 10, 12, 16-17 and 20-23.

Therefore, Appellants respectfully submit that the Examiner's position is clearly unreasonable.

2. DEPENDENT CLAIMS 2, 3, 6, 7, 9, 11, 13, 15, and 19

a. The Examiner's Position is Flawed as a Matter of Fact and Law.

Dependent claims 2, 3, 6, 7, 9, 11, 13, 15, and 19 depend from independent claims 1, 1, 4, 4, 8, 10, 12, 12, and 18, respectively, and further define the claimed invention.

Specifically, claim 2 recites, “*wherein the a descriptor propagation device generates a propagation function based upon the first descriptor and the first content granularity, and wherein the descriptor propagation device propagates the first descriptor based upon the propagation function and the first descriptor*”. This feature is not taught or suggested by Ishikawa.

Furthermore, claim 3 recites, “*a repository that stores the first descriptor associated with the first content granularity*”. This feature is not taught or suggest by Ishikawa.

Furthermore, claim 6 recites, “*a descriptor mapping device that generates another mapping function based upon the first descriptor and the first content granularity, and that stores the second mapping function in the information repository*”. This feature is not taught or suggested by Ishikawa.

Furthermore, claim 7, recites, “*a repository that stores the first descriptor associated with a first content granularity*”. This feature is not taught or suggested by Ishikawa.

Furthermore, claim 9 recites, “*a descriptor classification device that generates a classification function based upon the first content, and wherein the descriptor propagation device propagates the content based upon the classification function and the first content at the first content granularity*”. This feature is not taught or suggested by Ishikawa.

Furthermore, claim 11 recites, “*wherein analyzing the first content to determine the propagation function comprises extracting features from the first content*”. This feature is not taught or suggested by Ishikawa.

Furthermore, claim 13 recites, “*wherein the mapping function is stored in an information repository*”. This feature is not taught or suggest by Ishikawa.

Furthermore, claim 15 recites, “*analyzing the first descriptor to generate another*

mapping function". This feature is not taught or suggested by Ishikawa.

Furthermore, claim 19 recites, "*wherein the second descriptor is different than the first descriptor and is stored in an information repository*". This feature is not taught or suggest by Ishikawa.

Therefore, dependent claims 2, 3, 6, 7, 9, 11, 13, 15, and 19 , like independent claims 1, 4, 8, 10, 12, 16, 17, 18, 20, 21, 22, and 23 include at least one element, which is not taught or suggested by Ishikawa.

Therefore, Appellants respectfully submit that the Examiners' position is clearly unreasonable.

VIII. CONCLUSION

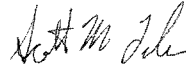
In view of the foregoing, Appellants submit that claims 1-4, 6-13, and 15-23, all of the claims presently pending in the application, are patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove the rejections of claims 1-4, 6-13, and 15-23.

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Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Assignee's Deposit Account number 50-0510.

Respectfully Submitted,

Date: December 3, 2007



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CLAIMS APPENDIX

1. A descriptor propagation system comprising:

a descriptor acceptance device that accepts a first descriptor associated with a first content granularity; and

a descriptor propagation device that propagates the first descriptor to a second content granularity that is finer than the first content granularity, and wherein the descriptor propagation device propagates the first descriptor without prior data regarding the first descriptor at the second granularity.

2. The system of claim 1, further comprising:

wherein the descriptor propagation device generates a propagation function based upon the first descriptor and the first content granularity, and

wherein the descriptor propagation device propagates the first descriptor based upon the propagation function and the first descriptor.

3. The system of claim 1, further comprising:

a repository that stores the first descriptor associated with the first content granularity.

4. A descriptor mapping system, comprising:

a descriptor acceptance device that accepts a first descriptor at a first content granularity;

an information repository that stores a mapping function; and

a descriptor propagation device that propagates the first descriptor to a second content granularity which is finer than the first content granularity based upon the first descriptor and the mapping function without prior data regarding the first descriptor at the second granularity.

6. The system of claim 4, further comprising:

a descriptor mapping device that generates another mapping function based upon the first descriptor and the first content granularity, and that stores the second mapping function in the information repository.

7. The system of claim 4, further comprising:

a repository that stores the first descriptor associated with a first content granularity.

8. A descriptor classification system, comprising:

a descriptor acceptance device that accepts a first content that includes a first descriptor at a first content granularity; and

a descriptor propagation device that propagates content that includes the first descriptor to a second content granularity

wherein the second content granularity is finer than the first content granularity, and

wherein the descriptor propagation device propagates the content without prior data regarding the content at the second content granularity.

9. The system of claim 8, further comprising:

a descriptor classification device that generates a classification function based upon the first content, and

wherein the descriptor propagation device propagates the content based upon the classification function and the first content at the first content granularity.

10. A method for propagating descriptors, comprising:

analyzing a first content at a first content granularity to determine a propagation function that correlates a first descriptor provided for the first content to a second content granularity that is finer than the first content granularity; and

propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity.

11. The method of claim 10, wherein analyzing the first content to determine the propagation function comprises extracting features from the first content.

12. A method for mapping descriptors, comprising:

mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function; and

propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity.

13. The method of claim 12, wherein the mapping function is stored in an information repository.

15. The method of claim 12, further comprising analyzing the first descriptor to generate another mapping function.

16. A method for classifying descriptors comprising:
generating a classification function based upon a first descriptor for a first content at a first content granularity;
accepting a second content granularity that does not include a descriptor; and
propagating the first descriptor to the second content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity.

17. A signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of propagating descriptors, comprising:
instructions for generating a classification function based upon a first descriptor for a first content at a first content granularity;
instructions for accepting a second content that does not include a descriptor; and
instructions for propagating the first descriptor to the second content at a second content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity.

18. A signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of mapping descriptors, comprising:

instructions for mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function; and

instructions for propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity.

19. The medium of claim 18, wherein the second descriptor is different than the first descriptor and is stored in an information repository.

20. A signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of classifying descriptors, comprising:

instructions for generating a classification function based upon a first descriptor for a first content at a first content granularity;

instructions for accepting a second content that does not include a descriptor; and

instructions for propagating the first descriptor to the second content at a second content granularity that is finer than the first content granularity based upon the classification function without data regarding the first descriptor at the second content granularity.

21. A method of deploying computing infrastructure in which computer-readable code is integrated into a computing system, such that said code and said computing system combine to perform a method for propagating descriptors, said method comprising:

analyzing a first content at a first content granularity to determine a propagation function that correlates a first descriptor provided for the first content to a second content granularity that is finer than the first content granularity; and

propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity.

22. A method of deploying computing infrastructure in which computer-readable code is integrated into a computing system, such that said code and said computing system combine to perform a method for mapping descriptors, said method comprising:

mapping a first descriptor at a first content granularity to a second content granularity that is finer than the first content granularity based upon a mapping function; and

propagating the first descriptor to the second content granularity without prior data regarding the first descriptor at the second content granularity.

23. A method of deploying computing infrastructure in which computer-readable code is integrated into a computing system, such that said code and said computing system combine to perform a method for classifying descriptors, said method comprising:

generating a classification function based upon a first descriptor for a first content at a first content granularity;

accepting a second content that does not include a descriptor; and

propagating the first descriptor to the second content at a second content granularity that is finer than the first content granularity based upon the classification function without prior data regarding the first descriptor at the second content granularity.

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EVIDENCE APPENDIX

Not applicable.

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RELATED PROCEEDINGS APPENDIX

Not applicable.